

## ABSTRACT

1 The present invention is a method for processing seismic data comprising acquiring  
2 seismic data using a sweep sequence including a plurality of cascaded sweep segments.  
3 The seismic data include a plurality of data segments and a listen time. The listen is  
4 combined with an initial data segment. The seismic data segments are phase shifted to a  
5 phase of a target data segment to be denoised (i.e. removal of ambient, harmonic and  
6 coherent noise). A difference between the target data segment and the remaining data  
7 segments is determined. If the determined difference exceeds a predetermined threshold,  
8 data in the target data segment is replaced with data derived from the remaining data  
9 segments. The data segments may be stacked to form a new target data segment. The  
10 listen time is extracted from the initial data segment.